Pesticide Spray Drift Conference

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AgDRIFT®

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A Really Fast Overview

Introduction

AgDRIFT® Spray Drift Deposition Model

- AgDRIFT® incorporates a proposed overall method for evaluating off-site deposition of aerial, orchard or ground applied pesticides, and acts as a tool for evaluating the potential of buffer zones to protect sensitive aquatic and terrestrial habitats from undesired exposures.

Program Overview

- AgDRIFT® was developed under a cooperative Research and Development Agreement, CRADA, between the EPA, USDA, US Forest Service, and SDTF.

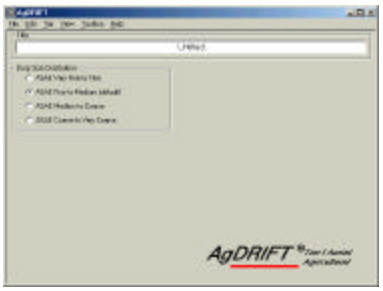
Program Overview

- AgDRIFT® is a modified version of AGDISP, a US Forest Service Model. Modifications include:
  - Took box to standardize calculations
  - Built-in graphics
  - Special export functions
  - Improved evaporation function
  - Emphasis drift to speed up the calculations

AgDRIFT® Two Versions

- Regulatory Version Two Extra Tiers:
  - Tier I Aerial
  - Tier II Aerial
  - Direct access to all the SDTF field studies

Tier I Aerial



AgDRIFT® Aerial Tier I

Regulatory Risk Assessment

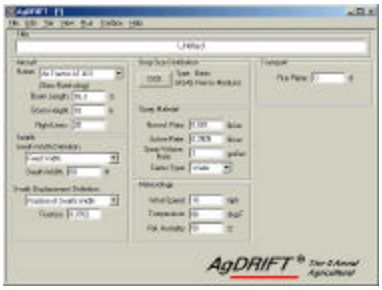
- Screening Tool
- "Reasonable Worst Case"

Implies maximum ***acceptable*** Deposition

Not

Maximum ***expected*** Deposition

Tier II Aerial



AgDRIFT® Aerial Tier II

Regulatory Risk Assessment

- Advanced Registration Tool
- Designed for Label Mitigation
- Selected Inputs can be Changed
  - Measurable
  - Controllable
  - Enforceable

AgDRIFT® Two Versions

- Public Version or Web Version
  - No access to the SDTF field data
  - No Tier I or Tier II Aerial
  - Defaults values "Typical Application Conditions"
  - Tier I & Tier II results can be recovered by using the Tier I default values. (See manual)

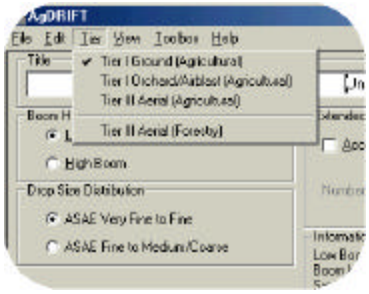
AgDRIFT® MAP

Web Version 2.03

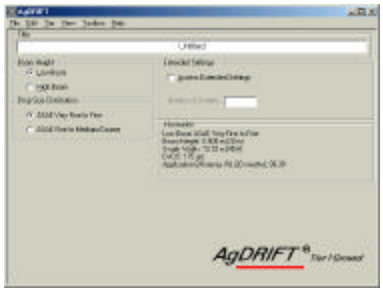
Two Modes and Four Tiers

- Agricultural
  - Tier I – Ground (Empirical)
  - Tier I –Orchard (Empirical)
  - Tier III – Aerial (Physics Based)
- Forestry
  - Tier III – Aerial (Physics Based)

AgDRIFT® Program Map



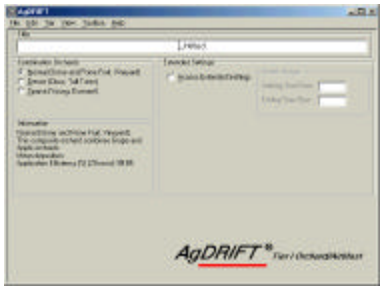
AgDRIFT® Tier I Ground



Tier I Ground

- Boom Height
  - Low
  - high
- Drop Size Distribution
  - FINE
  - MEDIUM / COARSE
- Extended Settings
  - Number of swaths
- Info
  - Field data summary

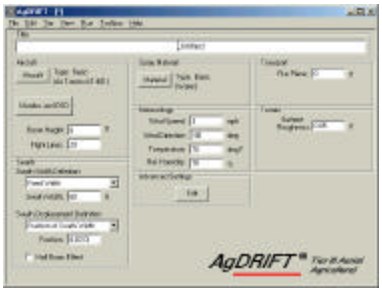
AgDRIFT® Tier I Orchard



Tier I Orchard

- Combination Orchards
  - Normal
  - Dense
  - Sparse
- Extended Setting
- Info

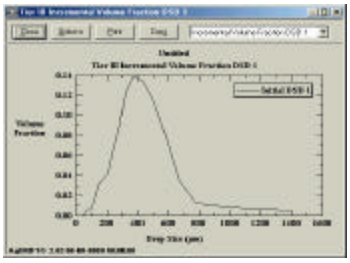
AgDRIFT® Tier III Aerial



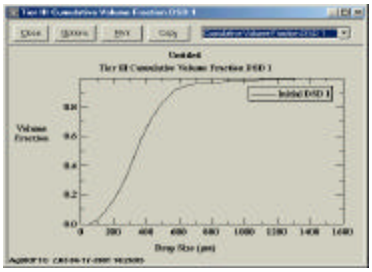
Tier III Aerial

- Aircraft (72)
- Nozzle & DSD
- Transport
- Swath
- Spray Material
- Meteorology
- Terrain
- Advance Settings

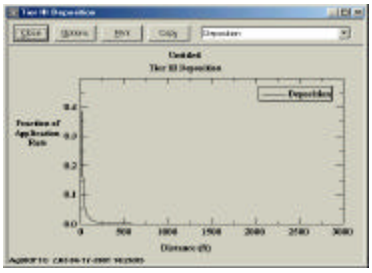
Graphical Outputs
Incremental Volume Fraction



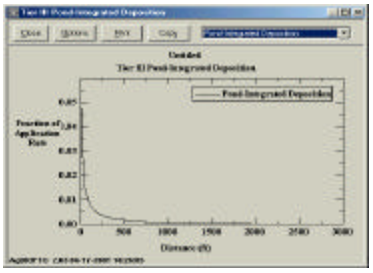
Graphical Outputs
Cumulative Fraction



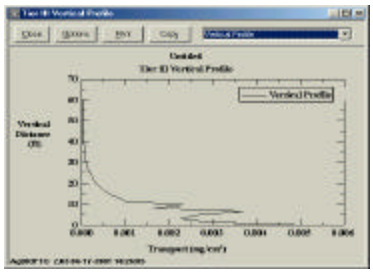
Graphical Outputs
Deposition



Graphical Outputs
Pond-Integrated Deposition



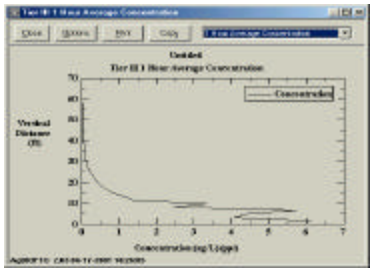
Graphical Outputs
Vertical Profile



Vertical Profile

- The total amount of mass (pesticide) passing in air at a given point down -wind as a function of height above the ground
- Think of it as the drift before it deposits
- Flux plane is set by the user
- Units mg/cm^2
- Mass is conserved

Graphical Outputs
1 Hour Average Concentration



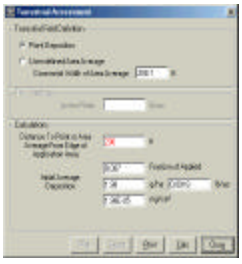
1 Hour Average Concentration

- The total amount of mass (pesticide) passing in air at a given point down -wind as a function of height above the ground diluted with the volume of air the passes through the same point (area) in space
- The volume of air is based on the wind speed
- Units ηg/l

Toolbox
(Aquatic Assessment)

- Water body
  - EPA Pond
  - EPA wetland
  - User Defined
- Application Rate
- Calculations
  - Buffer
  - Fraction of applied (rate)
    - Fraction
    - g/ha
    - Pond concentration ηg/l

Toolbox
(Terrestrial Assessment)



- Terrestrial Field Deposition
  - Point
  - Average
- Application Rate
- Calculations
  - Buffer
  - Fraction of applied (rate)
    - Fraction
    - g/ha
    - ηg/cm^2

Toolbox
(Spray Block Assessment)

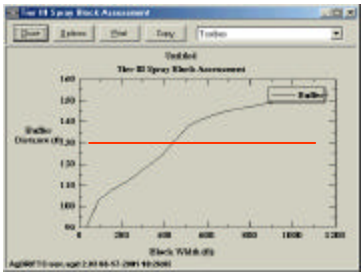
- Water body
  - EPA Pond
  - EPA wetland
  - User Defined
- Application Rate
- Calculations
  - Buffer
  - Fraction of applied (rate)
    - Fraction
    - g/ha
    - ng/cm^2

Toolbox
(Spray Block Assessment)

Spray block assessment: Ask yourself the following question.

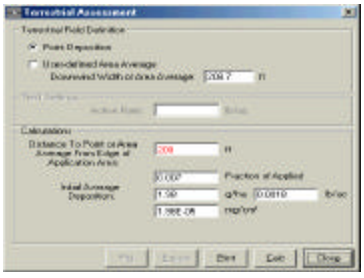
If the area to be sprayed is 125ft from the sensitive area. How large of a area can I spray before I exceed a deposition of one percent of the application rate?

Toolbox
(Spray Block Assessment)

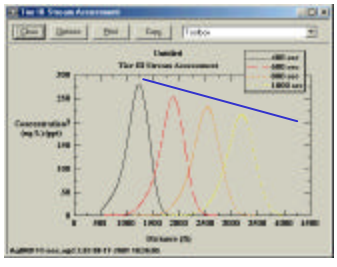


Toolbox
(Stream Assessment)

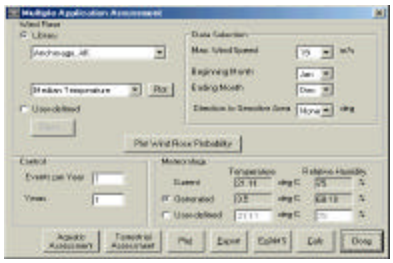
Toolbox
(Stream Assessment)



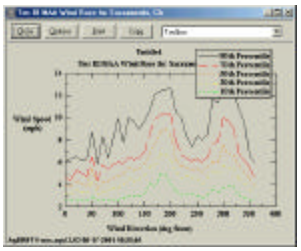
Toolbox
(Stream Assessment)



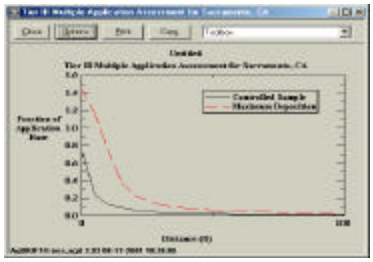
Toolbox
(Multiple Application Assessment)



Toolbox
(Multiple Application Assessment)
Wind Rose



Toolbox
(Multiple Application Assessment)
Deposition



And Much More

- HELP!
  The F1 key Short cut to the program help and definitions
- Details!
  Read the Manual
- Updates!
  Check the Web site: www.AgDRIFT.com

AgDRIFT® Training

- Date: To Be Established
- Time: Session Length 1 or 2 Days
- Place: Groups Choice
- Cost: Cover Expenses

- Contact SDTF:
  Dave, Dave, Dave, or Andrew

Questions